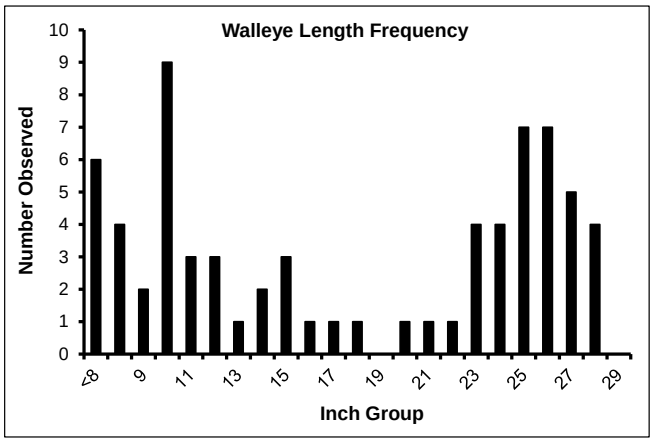
WISCONSIN DNR
FISHERIES INFORMATION SHEET

LAKE: Pickerel Lake **COUNTY:** Forest **YEAR:** 2017

The Wisconsin Department of Natural Resources conducted a comprehensive survey of Pickerel Lake, Forest County, to analyze the health of its fishery. Pickerel Lake is located approximately 10 miles south of Crandon, with boat access off of Pickerel Lake Road. Pickerel Lake covers 1,299 acres and achieves a maximum depth of 14 feet.



* Note: Adult walleye are defined as all sexually mature fish and all fish of unknown sex ≥ 15 inches long.

Walleye

A mark-recapture survey was conducted to estimate the abundance of adult walleye in Pickerel Lake during 2017. Over five days of netting and one night of electrofishing during April a total of 70 different walleye, 43 considered adults, were captured. Based on our survey data we estimate the adult walleye population in Pickerel Lake to be approximately 51 fish (0.04/acre). At approximately one adult walleye for every 25 acres, this population is incredibly low. In fact, this estimate makes Pickerel Lake the least dense population (for waters managed for walleye) ever measured in the ceded territory of Wisconsin.

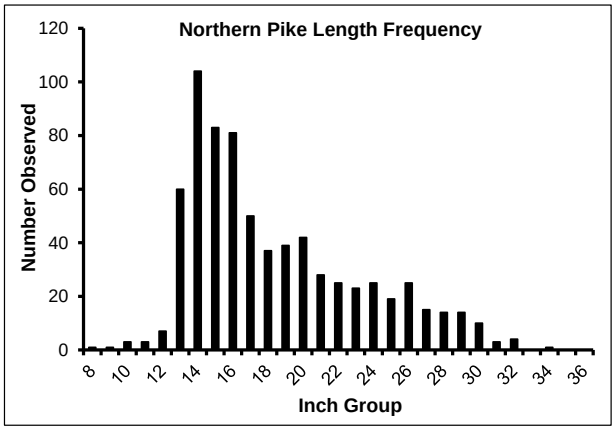
Historically, Pickerel Lake supported an above average walleye population for many decades. The WDNR has never been able to confirm natural reproduction of walleye in Pickerel Lake, however natural reproduction of walleye was significant enough in Crane Lake (connected waters) to support the population of walleye in both Crane and Pickerel Lake. However, the last time natural reproduction of walleye was documented in Crane Lake was in 1983. It was not until 2006 that regular walleye stocking began on Pickerel Lake. From 2006 to 2013 the majority of walleye stocking consisted of small fingerling walleye (~2 inches), these seemingly unsuccessful stocking events have created the extremely low adult walleye population found in Pickerel Lake during 2017. From 2014 to the present Pickerel Lake has been stocked annually with large fingerling walleye (~7-8 inches) as part of a walleye rehabilitation project by the WDNR, Pickerel-Crane Lake District, and Mole Lake Chippewa Community. During the 2017 survey we observed good numbers of juvenile walleye from the recent stocking events, and the adult walleye population is expected to increase in the near future as these fish mature.

Every walleye captured during our spring survey, 70 fish, was measured to assess size structure. After removing fish less than 10 inches, approximately 58.6% of the fish sampled were ≥ 20 inches and 39.7% were ≥ 25 inches. The size structure of this population is artificially high, created by a cessation of walleye stocking from 1996 to 2005.

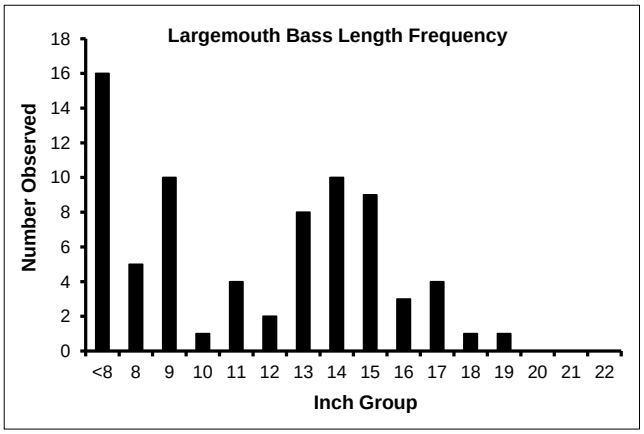
Northern Pike

Northern pike were captured and marked with an identifiable fin clip during the spring fyke net survey designed to assess walleye and northern pike. A second sample of northern pike was collected during an early spring electrofishing survey, and the bullhead removal project which took place between 5/17 and 6/7/2017. The data from these surveys estimate the adult (≥ 12 inches) northern pike population in Pickerel Lake at approximately 9,286 fish (7.2/acre). At over 7 adults per acre, the northern pike population in Pickerel Lake is considered to be overabundant when compared to other populations in the area.

During the 2017 survey we captured a total of 717 different northern pike, all of these fish were measured to assess size structure. The size structure of the northern pike population in Pickerel Lake is considered poor with only 32.1% of the fish sampled being ≥ 21 inches, and 7.2% ≥ 28 inches in length. Poor size structure is common in overabundant populations, and size structure would likely improve if the population was reduced. The largest northern pike captured during our survey was 34.9 inches long.



* Note: Adult northern pike are defined as all sexually mature fish and fish of unknown sex ≥ 12 inches long.



* Note: Adult bass are defined as all bass ≥ 8 inches long.

Largemouth Bass

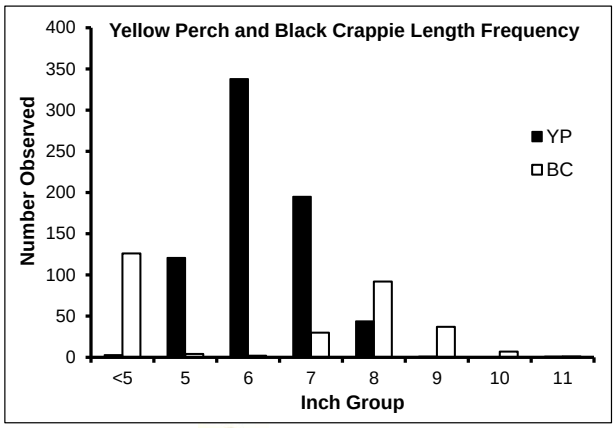
The largemouth bass population was assessed during an electrofishing survey that was conducted on the night of 6/13/2017. During this survey a total of 74 different largemouth bass were captured, with 58 considered to be adults (≥ 8 inches). Relative abundance of adult largemouth bass was measured at 8.8 adults per mile, slightly lower than the relative abundance of 10.2 adults per mile measured during the 2012 survey, when the adult population was estimated to be approximately 1.8 fish/acre. The Pickerel Lake largemouth bass population is considered to be of low abundance, when compared to other populations in the area.

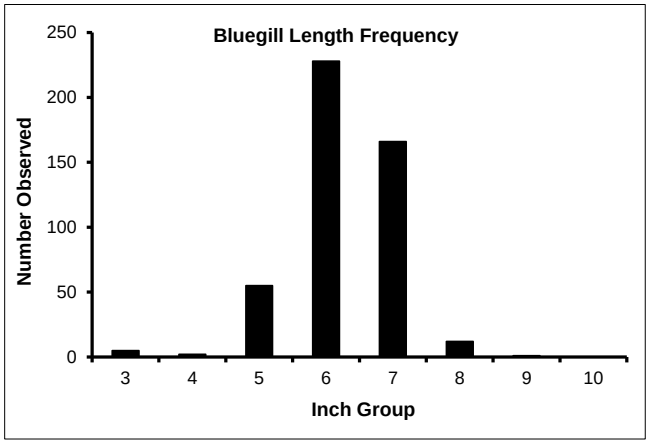
All largemouth bass captured during the bass electrofishing survey were measured to assess the size structure of the population. The size structure of the Pickerel Lake largemouth bass population is quite good with approximately 48.3% of the largemouth bass captured being ≥ 14 inches and 3.4% ≥ 18 inches in length. However, the current largemouth bass size structure has decreased since 2012 when approximately 61.0% and 6.7% of the fish sampled were ≥ 14 and 18 inches, respectively.

Yellow Perch  **and Black Crappie** 

The early spring netting survey was used to assess abundance of yellow perch and black crappie in Pickerel Lake. Relative abundance of yellow perch was measured at 80.9 fish per net-night, while black crappie relative abundance was 13.0 fish per net-night. The yellow perch population seems to have increased quite rapidly and are now the dominant panfish in Pickerel Lake. At over 80 fish per net-night the yellow perch population is considered abundant. Black crappie are of average abundance, when compared to other populations in the area.

Random samples of 703 yellow perch and 299 black crappie were measured during the 2017 survey to assess the size structure of their populations. Yellow perch size structure is considered poor with only 6.6% of the fish sampled being ≥ 8 inches. However, yellow perch have been of low abundance until recently, suggesting this population is quite young, and the size structure is expected to increase quickly as these fish continue to grow. There appears to be a sizable year class of black crappie from 2016, after removing those fish (< 5 inches) the size structure of the population is considered below average for the area with 79.2% of the fish being ≥ 8 inches, and 4.6% of the fish being ≥ 10 inches in length.





Bluegill 

Nets were set in early June to assess the summer spawning panfish populations in Pickerel Lake. Bluegill appear to be the second most abundant panfish (behind the emerging yellow perch population) in Pickerel Lake with a relative abundance of 51.6 fish per net-night. At over 50 fish per net-night the Pickerel Lake bluegill population is considered to be of average abundance when compared to other area lakes. Bluegill abundance has decreased substantially since 2012 when the same survey yielded a relative abundance of 584.0 bluegill per net-lift.

Bluegill have always been very abundant in PIckerel Lake. In fact, over abundance of bluegill is what led to the 18-inch minimum length limit for largemouth bass in 1996. The rationale behind the protective regulation was quite simple. By increasing largemouth bass abundance, predation on bluegill would increase, reducing bluegill abundance. The protective regulation on largemouth bass in Pickerel Lake did not work as planned. While largemouth bass abundance increased, abundance did not increase enough to decrease bluegill abundance. It was not until recently that bluegill abundance began to decrease, which is most likely due to the bullhead removal project, as we have seen decreases in bluegill abundance and increases in yellow perch abundance in all other lakes where bullhead removals have been conducted. Currently the bluegill population is low enough that restrictive regulations on largemouth bass may no longer be necissary.

A random sample of 469 bluegill were measured during our panfish survey to assess the size structure of the population. Bluegill size structure is considered average with approximately 86.8% of the fish being ≥ 6 inches and 38.2% of the fish being ≥ 7 inches in length. The current size structure is better than the size structure measured in 2012, when 85.5% and 14.3% were ≥ 6 and 7 inches respectively. If bluegill abundance remains similar to the current population, size structure is expected to increase further in the near future.

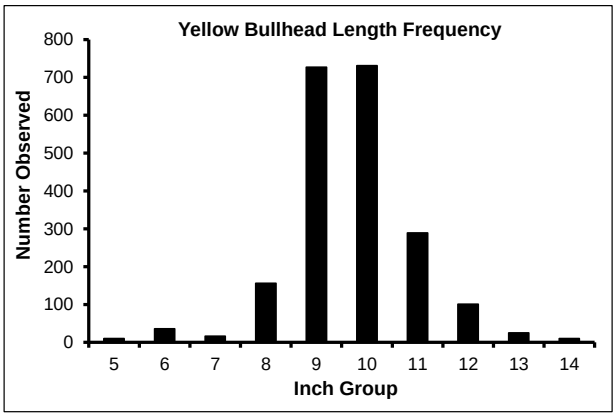
Yellow Bullhead 

Bullhead were measured at a very high relative abundance during surveys to evaluate the largemouth bass regulation on Pickerel Lake in 2012. After observing the high abundance of bullhead in Pickerel Lake extensive effort has been put toward removing bullhead as part of a walleye rehabilitation project. Since the walleye rehabiliation project began in 2012, a total of 22,694 bullhead have been removed from Pickerel Lake, the bulk of which were removed during bullhead removal projects occuring in 2014 (10,697 fish removed) and 2017 (10,998 fish removed).

Throughout the 2017 survey, and bullhead removal project, random subsamples of yellow bullhead were measured daily to assess size structure, a total of 2,101 fish. The size structure of the bullhead population in Pickerel Lake was quite high in 2017 with 89.6% of the fish measured being ≥ 9 inches, and 20.2% being ≥ 11 inches in length.

A major concern with the bullhead removal project was that bullhead recruitment would increase and quickly replace the portion of the population that was removed. While there has definitely been natural reproduction of bullhead since the major removal in 2014, the very low numbers of bullhead < 9 inches captured during this years survey suggest that there has not been a major compensatory response by bullhead in Pickerel Lake. This leads me to believe that great progress has been made in reducing bullhead abundance. However, bullhead are still considered to be of above average abundance when compared to other populations in the area.

Future evaluation and analysis will be necessary to understand the impacts that the bullhead removal project will have on the Pickerel Lake fishery. The data obtained so far suggests that bullhead removals have had positive impacts on walleye and yellow perch, and possible negative impacts on bluegill.



Other Species

The species listed above were the focus of the 2017 survey, with surveys designed to best sample these individual species. Ot her species captured during our survey efforts include; pumpkinseed, hybrid bluegill, white sucker, and golden shiner. Based on catch rates and observations during this sur vey, pumpkinseed and hybrid bluegill are considered abundant. White sucker, and golden shiner are of low to moderate abundance. Angler access is considered sufficient with multiple boat landings on Pickerel

This report is interim only; data and findings should not be considered final.
For answers to questions about fisheries management activites and plans for Pickerel Lake contact:

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